

“Confound it, Carnes, I am on my vacation!”

“I know it, Doctor, and I hate to disturb you, but I felt that I simply had to. I have one of the weirdest cases on my hands that I have ever been mixed up in and I think that you’ll forgive me for calling you when I tell you about it.”

How could a human body be found actually splintered--broken into sharp fragments like a shattered glass! Once again Dr. Bird probes deep into an amazing mystery.

Dr. Bird groaned into the telephone transmitter.

“I took a vacation last summer, or tried to, and you hauled me away from the best fishing I have found in years to help you on a case. This year I traveled all the way from Washington to San Francisco to get away from you and the very day that I get here you are after me. I won’t have anything to do with it. Where are you, anyway?”

“I am at Fallon, Nevada, Doctor. I’m sorry that you

won't help me out because the case promises to be unusually interesting. Let me at least tell you about it."

Dr. Bird groaned louder than ever into the telephone transmitter.

"All right, go ahead and tell me about it if it will relieve your mind, but I have given you my final answer. I am not a bit interested in it."

"That is quite all right, Doctor, I don't expect you to touch it. I hope, however, that you will be able to give me an idea of where to start. Did you ever see a man's body broken in pieces?"

"Do you mean badly smashed up?"

"No indeed, I mean just what I said, broken in pieces. Legs snapped off as though the entire flesh had become brittle."

"No, I didn't, and neither did anyone else."

“I have seen it, Doctor.”

“Hooey! What had you been drinking?”

Operative Carnes of the United States Secret Service chuckled softly to himself. The voice of the famous scientist of the Bureau of Standards plainly showed an interest which was quite at variance with his words.

“I was quite sober, Doctor, and so was Hughes, and we both saw it.”

“Who is Hughes?”

“He is an air mail pilot, one of the crack fliers of the Transcontinental Airmail Corporation. Let me tell you the whole thing in order.”

“All right. I have a few minutes to spare, but I’ll warn you again that I don’t intend to touch the case.”

“Suit yourself, Doctor. I have no authority to requisition your services. As you know, the T.A.C. has

been handling a great deal of the transcontinental air mail with a pretty clean record on accidents. The day before yesterday, a special plane left Washington to carry two packages from there to San Francisco. One of them was a shipment of jewels valued at a quarter of a million, consigned to a San Francisco firm and the other was a sealed packet from the War Department. No one was supposed to know the contents of that packet except the Chief of Staff who delivered it to the plane personally, but rumors got out, as usual, and it was popularly supposed to contain certain essential features of the Army's war plans. This much is certain: The plane carried not only the regular T.A.C. pilot and courier, but also an army courier, and it was guarded during the trip by an army plane armed with small bombs and a machine-gun. I rode in it. My orders were simply to guard the ship until it landed at Mills Field and then to guard the courier from there to the Presidio of San Francisco until his packet was delivered personally into the hands of the Commanding General of the Ninth Corps Area.

“The trip was quiet and monotonous until after we left Salt Lake City at dawn this morning. Nothing happened until we were about a hundred miles east of Reno. We had taken elevation to cross the Stillwater Mountains and were skimming low over them, my plane trailing the T.A.C. plane by about half a mile. I was not paying any particular attention to the other ship when I suddenly felt our plane leap ahead. It was a fast Douglas and the pilot gave it the gun and made it move, I can tell you. I yelled into the speaking tube and asked what was the reason. My pilot yelled back that the plane ahead was in trouble.

“As soon as it was called to my attention I could see myself that it wasn’t acting normally. It was losing elevation and was pursuing a very erratic course. Before we could reach it it lost flying speed and fell into a spinning nose dive and headed for the ground. I watched, expecting every minute to see the crew make parachute jumps, but they didn’t and the plane hit the ground with a terrific crash.”

“It caught fire, of course?”

“No, Doctor, that is one of the funny things about the accident. It didn’t. It hit the ground in an open place free from brush and literally burst into pieces, but it didn’t flame up. We headed directly for the scene of the crash and we encountered another funny thing. We almost froze to death.”

“What do you mean?”

“Exactly what I say. Of course, it’s pretty cold at that altitude all the time, but this cold was like nothing I had ever encountered. It seemed to freeze the blood in our veins and it congealed frost on the windshields and made the motor miss for a moment. It was only momentary and it only existed directly over the wrecked plane. We went past it and swung around in a circle and came back over the wreck, but we didn’t feel the cold again.

“The next thing we tried to do was to find a landing place. That country is pretty rugged and rough and there wasn’t a flat place for miles that was large enough to land a ship on. Hughes and I talked it over and there didn’t seem to be much of anything that we

could do except to go on until we found a landing place. I had had no experience in parachute jumping and I couldn't pilot the plane if Hughes jumped. We swooped down over the wreck as close as we dared and that was when we saw the condition of the bodies. The whole plane was cracked up pretty badly, but the weird part of it was the fact that the bodies of the crew had broken into pieces, as though they had been made of glass.



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Arms and legs were detached from the torsos and lying at a distance. There was no sign of blood on the ground. We saw all this with our naked eyes from close at hand and verified it by observations through binoculars from a greater height.

“When we had made our observations and marked the location of the wreck as closely as we could, we headed east until we found a landing place near Fallon. Hughes dropped me here and went on to Reno, or to San Francisco if necessary, to report the accident and get more planes to aid in the search. I was wholly at sea, but it seemed to be in your line and as I knew that you were at the St. Francis, I called you up.”

“What are your plans?”

“I made none until I talked with you. The country where the wreck occurred is unbelievably wild and we can’t get near it with any transportation other than burros. The only thing that I can see to do is to

gather together what transportation I can and head for the wreck on foot to rescue the packets and to bring out the bodies. Can you suggest anything better?"

"When do you expect to start?"

"As soon as I can get my pack train together. Possibly in three or four hours."

"Carnes, are you sure that those bodies were broken into bits? An arm or a leg might easily be torn off in a complete crash."

"They were smashed into bits as nearly as I could tell, Doctor. Hughes is an old flier and he has seen plenty of crashes but he never saw anything like this. It beats anything that I ever saw."

"If your observations were accurate, there could be only one cause and that one is a patent impossibility. I haven't a bit of equipment here, but I expect that I can get most of the stuff I want from the University of California across the bay at Berkeley. I can get a

plane at Crissy Field. I'll tell you what to do, Carnes. Get your burro train together and start as soon as you can, but leave me half a dozen burros and a guide at Fallon. I'll get up there as soon as I can and I'll try to overtake you before you get to the wreck. If I don't, don't disturb anything any more than you can help until my arrival. Do you understand?"

"I thought that you were on your vacation, Doctor."

"Oh shut up! Like most of my vacations, this one will have to be postponed. I'll move as swiftly as I can and I ought to be at Fallon to-night if I'm lucky and don't run into any obstacles. Burros are fairly slow, but I'll make the best time possible."

"I rather expected you would, Doctor. I can't get my pack train together until evening, so I'll wait for you right here. I'm mighty glad that you are going to get in on it."

Silently Carnes and Dr. Bird surveyed the wreck of the T.A.C. plane. The observations of the secret service operative had been correct. The bodies of the

unfortunate crew had been broken into fragments. Their limbs had not been twisted off as a freak of the fall but had been cleanly broken off, as though the bodies had suddenly become brittle and had shattered on their impact with the ground. Not only the bodies, but the ship itself had been broken up. Even the clothing of the men was in pieces or had long splits in the fabric whose edges were as clean as though they had been cut with a knife.

Dr. Bird picked up an arm which had belonged to the pilot and examined it. The brittleness, if it had ever existed, was gone and the arm was limp.

“No *rigor mortis*,” commented the Doctor. “How long ago was the wreck?”

“About seventy-two hours ago.”

“Hm-m! What about those packets that were on the plane?”

Carnes stepped forward and gingerly inspected first the body of the army courier and then that of the

courier of the T.A.C.

“Both gone, Doctor,” he reported, straightening up.

Dr. Bird’s face fell into grim lines.

“There is more to this case than appears on the surface, Carnes,” he said. “This was no ordinary wreck. Bring up that third burro; I want to examine these fragments a little. Bill,” he went on to one of the two guides who had accompanied them from Fallon, “you and Walter scout around the ground and see what you can find out. I especially wish to know whether anyone has visited the scene of the wreck.”

The guides consulted a moment and started out. Carnes drove up the burro the Doctor had indicated and Dr. Bird unpacked it. He opened a mahogany case and took from it a high powered microscope. Setting the instrument up on a convenient rock, he subjected portions of the wreck, including several fragments of flesh, to a careful scrutiny. When he had completed his observations he fell into a brown study, from which he was aroused by Carnes.

“What did you find out about the cause of the wreck, Doctor?”

“I don’t know what to think. The immediate cause was that everything was frozen. The plane ran into a belt of cold which froze up the motor and which probably killed the crew instantly. It was undoubtedly the aftermath of that cold which you felt when you swooped down over the wreck.”

“It seems impossible that it could have suddenly got cold enough to freeze everything up like that.”

“It does, and yet I am confident that that is what happened. It was no ordinary cold, Carnes; it was cold of the type that infests interstellar space; cold beyond any conception you have of cold, cold near the range of the absolute zero of temperature, nearly four hundred and fifty degrees below zero on the Fahrenheit scale. At such temperatures, things which are ordinarily quite flexible and elastic, such as rubber, or flesh, become as brittle as glass and would break in the manner which these bodies have broken. An examination of the tissues of the flesh shows that

it has been submitted to some temperature that is very low in the scale, probably below that of liquid air. Such a temperature would produce instant death and the other phenomena which we can observe.”

“What could cause such a low temperature, Doctor?”

“I don’t know yet, although I hope to find out before we are finished. Cold is a funny thing, Carnes. Ordinarily it is considered as simply the absence of heat; and yet I have always held it to be a definite negative quantity. All through nature we observe that every force has its opposite or negative force to oppose it. We have positive and negative electrical charges, positive and negative, or north and south, magnetic poles. We have gravity and its opposite apery, and I believe cold is really negative heat.”

“I never heard of anything like that, Doctor. I always thought that things were cold because heat was taken from them--not because cold was added. It sounds preposterous.”

“Such is the common idea, and yet I cannot accept it,

for it does not explain all the recorded phenomena. You are familiar with a searchlight, are you not?"

"In a general way, yes."

"A searchlight is merely a source of light, and of course, of heat, which is placed at the focus of a parabolic reflector so that all of the rays emanating from the source travel in parallel lines. A searchlight, of course, gives off heat. If we place a lens of the same size as the searchlight aperture in the path of the beam and concentrate all the light, and heat, at one spot, the focal point of the lens, the temperature at that point is the same as the temperature of the source of the light, less what has been lost by radiation. You understand that, do you not?"

"Certainly."

"Suppose that we place at the center of the aperture of the searchlight a small opaque disc which is permeable neither to heat nor light, in such a manner as to interrupt the central portion of the beam. As a result, the beam will go out in the form of a hollow

rod, or pipe, of heat and light with a dark, cold core. This core will have the temperature of the surrounding air plus the small amount which has radiated into it from the surrounding pipe. If we now pass this beam of light through a lens in order to concentrate the beam, both the pipe of heat and the cold core will focus. If we place a temperature measuring device near the focus of the dark core, we will find that the temperature is lower than the surrounding air. This means that we have focused or concentrated cold.”

“That sounds impossible. But I can offer no other criticism.”

“Nevertheless, it is experimentally true. It is one of the facts which lead me to consider cold as negative heat. However, this is true of cold, as it is of the other negative forces; they exist and manifest themselves only in the presence of the positive forces. No one has yet concentrated cold except in the presence of heat, as I have outlined. How this cold belt which the T.A.C. plane encountered came to be there is another question. The thing which we have to determine is

whether it was caused by natural or artificial forces.”

“Both of the packets which the plane carried are gone, Doctor,” observed Carnes.

“Yes, and that seems to add weight to the possibility that the cause was artificial, but it is far from conclusive. The packets might not have been on the men when the plane fell, or someone may have passed later and taken them for safekeeping.”

The doctor’s remarks were interrupted by the guides.

“Someone has been here since the wreck, Doctor,” said Bill. “Walter and I found tracks where two men came up here and prowled around for some time and then left by the way they came. They went off toward the northwest, and we followed their trail for about forty rods and then lost it. We weren’t able to pick it up again.”

“Thanks, Bill,” replied the doctor. “Well, Carnes, that seems to add more weight to the theory that the spot of cold was made and didn’t just happen. If a

prospecting party had just happened along they would either have left the wreck alone or would have made some attempt to enter the bodies. That cold belt must have been produced artificially by men who planned to rob this plane after bringing it down and who were near at hand to get their plunder. Is there any chance of following that trail?"

"I doubt it, Doc. Walter and I scouted around quite a little, but we couldn't pick it up again."

"Is there any power line passing within twenty miles of here?"

"None that Walter and I know of, Doc."

"Funny! Such a device as must have been used would need power and lots of it for operation. Well, I'll try my luck. Carnes, help me unpack and set up the rest of my apparatus."

With the aid of the operative, Dr. Bird unpacked two of the burros and extracted from cases where they were carefully packed and padded some elaborate

electrical and optical apparatus. The first was a short telescope of large diameter which he mounted on a base in such a manner that it could be elevated or depressed and rotated in any direction. At the focal point of the telescope was fastened a small knot of wire from which one lead ran to the main piece of apparatus, which he sat on a flat rock. The other lead from the wire knot ran into a sealed container surrounded by a water bath under which a spirit lamp burned. From the container another lead led to the main apparatus. This main piece consisted of a series of wire coils mounted on a frame and attached to the two leads. The doctor took from a padded case a tiny magnet suspended on a piece of wire of exceedingly small diameter which he fastened in place inside the coils. Cemented to the magnet was a tiny mirror.

“What is that apparatus?” asked Carnes as the doctor finished his set-up and surveyed it with satisfaction.

“Merely a thermocouple attached to a D’Arsonval galvanometer,” replied the doctor. “This large, squat telescope catches and concentrates on the thermocouple and the galvanometer registers the

temperature.”

“You’re out of my depth. What is a thermocouple?”

“A juncture of two wires made of dissimilar metals, in this case of platinum and of platinum-iridium alloy. There is another similar junction in this case, which is kept at a constant temperature by the water bath. When the temperatures of the two junctions are the same, the system is in equilibrium. When they are at different temperatures, an electrical potential is set up, which causes a current to flow from one to the other through the galvanometer. The galvanometer consists of a magnet set up inside coils through which the current I spoke of flows. This current causes the magnet to rotate and by watching the mirror, the rotation can be detected and measured.

“This device is one of the most sensitive ever made, and is used to measure the radiation from distant stars. Currents as small as .000000000000000000000000000001 ampere have been detected and measured. This particular instrument is not that sensitive to begin with, and has

its sensitivity further reduced by having a high resistance in one of the leads.”

“What are you going to use it for?”

“I am going to try to locate somewhere in these hills a patch of local cold. It may not work, but I have hopes. If you will manipulate the telescope so as to search the hills around here, I will watch the galvanometer.”

For several minutes Carnes swung the telescope around. Twice Dr. Bird stopped him and decreased the sensitiveness of his instrument by introducing more resistance in the lines in order to keep the magnet from twisting clear around, due to the fluctuations in the heats received on account of the varying conditions of reflection. As Carnes swung the telescope again the magnet swung around sharply, nearly to a right angle to its former position.

“Stop!” cried the doctor. “Read your azimuth.”

Carnes read the compass bearing on the protractor attached to the frame which supported the telescope.

Dr. Bird took a pair of binoculars and looked long and earnestly in the indicated direction. With a sigh he laid down the glasses.

“I can’t see a thing, Carnesy,” he said. “We’ll have to move over to the next crest and make a new set-up. Plant a rod on the hill so that we can get an azimuth bearing and get the airline distance with a range finder.”

On the hilltop which Dr. Bird had pointed out the apparatus was again set up. For several minutes Carnes swept the hills before an exclamation from the doctor told him to pause. He read the new azimuth, and the doctor laid off the two readings on a sheet of paper with a protractor and made a few calculations.

“I don’t know,” he said reflectively when he had finished his computations. “This darned instrument is still so sensitive that you may have merely focused on a deep shadow or a cold spring or something of that sort, but the magnet kicked clear around and it may mean that we have located what we are looking for. It should be about two miles away and almost due west

of here.”

“There is no spring that I know of, Doc, and I think I know of every water hole in this country,” remarked Bill.

“There could hardly be a spring at this elevation, anyway,” replied the doctor. “Maybe it is what we are seeking. We’ll start out in that direction, anyway. Bill, you had better take the lead, for you know the country. Spread out a little so that we won’t be too bunched if anything happens.”

For three-quarters of an hour the little group of men made their way through the wilderness in the direction indicated by the doctor. Presently Bill, who was in the lead, held up his hand with a warning gesture. The other three closed up as rapidly as cautious progress would allow.

“What is it, Bill?” asked the doctor in an undertone.

“Slip up ahead and look over that crest.”

The doctor obeyed instructions. As he glanced over he gave vent to a low whistle of surprise and motioned for Carnes to join him. The operative crawled up and glanced over the crest. In a hollow before them was a crude one-storied house, and erected on an open space before it was a massive piece of apparatus. It consisted of a number of huge metallic cylinders, from which lines ran to a silvery concave mirror mounted on an elaborate frame which would allow it to be rotated so as to point in any direction.

“What is it?” whispered Carnes.

“Some kind of a projector,” muttered the doctor. “I never saw one quite like it, but it is meant to project something. I can’t make out the curve of that mirror. It isn’t a parabola and it isn’t an ellipse. It must be a high degree subcatenary or else built on a transcendental function.”

He raised himself to get a clearer view, and as he did so a puff of smoke came from the house, to be followed in a moment by a sharp crack as a bullet flattened itself a few inches from his head. The doctor

tumbled back over the crest out of sight of the house. Bill and Walter hurried forward, their rifles held ready for action.

“Get out on the flanks, men,” directed the doctor.

“The man we want is in a house in that hollow. He’s armed, and he means business.”

Bill and Walter crawled under the shelter of the rocks to a short distance away and then, rifles ready, advanced to the attack. A report came from the hollow and a bullet whined over Bill’s head. Almost instantly a crack came from Walter’s rifle and splinters flew from the building in the hollow a few inches from a loophole, through which projected the barrel of a rifle.

The rifle barrel swung rapidly in a circle and barked in Walter’s direction; but as it did so, Bill’s gun spoke and again splinters flew from the building.

“Good work!” ejaculated Dr. Bird as he watched the slow advance of the two guides. “If we just had rifles we could join in the party, but it’s a little far for

effective pistol work. Let's go ahead, and we may get close enough to do a little shooting."

Pistols in hand, Carnes and the doctor crawled over the crest and joined the advance. Again and again the rifle spoke from the hollow and was answered by the vicious barks of the rifles in the hands of the guides, Carnes and the doctor resting their pistols on rocks and sending an occasional bullet toward the loophole. The conditions of light and the moving target were not conducive to good marksmanship on the part of the besieged man, and none of the attackers were hit. Presently Walter succeeded in sending a bullet through the loophole. The rifle barrel suddenly disappeared. With a shout the four men rose from their cover and advanced toward the building at a run.

As they did so an ominous whirring sound came from the apparatus in front of the house and a sudden chill filled the air.

"Back!" shouted Dr. Bird. "Back below the hill if you value your lives!"

He turned and raced at full speed toward the sheltering crest of the hill, the others following him closely. The whirring sound continued, and the concave reflector turned with a grating sound on its gears. As the path of its rays struck the ground the rocks became white with frost and one rock split with a sharp report, one fragment rolling down the slope, carrying others in its trail.

With panic-stricken faces the four men raced toward the sheltering crest, but remorselessly the reflector swung around in their direction. The intense cold numbed the racing men, cutting off their breath and impeding their efforts for speed.

“Stop!” cried the doctor suddenly. “Fire at that reflector! It’s our only chance!”

He set the example by turning and emptying his pistol futilely at the turning mirror. Bill, Walter and Carnes followed his example. Nearer and nearer to them came the deadly ray. Bill was the nearest to its path, and he suddenly stiffened and fell forward, his useless gun still grasped in his hands. As his body struck the

ground it rolled down hill for a few feet, the deadly ray following it. His head struck a rock, and Carnes gave a cry of horror as it broke into fragments.

Walter threw his rifle to his shoulder and fired again and again at the rotating disc. The cold had become intense and he could not control the actions of his muscles and his rifle wavered about. He threw himself flat on the ground, and, with an almost superhuman effort, steadied himself for a moment and fired. His aim was true, and with a terrific crash the reflector split into a thousand fragments. Dr. Bird staggered to his feet.

“It’s out of order for a moment!” he cried. “To the house while we can!”

As swiftly as his numbed feet would allow him, he stumbled toward the house. The muzzle of the rifle again projected from the loophole and with its crack the doctor staggered for a moment and then fell. Walter’s rifle spoke again and the rifle disappeared through the loophole with a spasmodic jerk. Carnes stumbled over the doctor.

“Are you hit badly?” he gasped through chattering teeth.

“I’m not hit at all,” muttered the doctor. “I stumbled and fell just as he fired. Look out! He’s going to shoot again!”

The rifle barrel came slowly into view through the loophole. Walter fired, but his bullet went wild. Carnes threw himself behind a rock for protection.

The rifle swung in Walter’s direction and paused. As it did so, from the house came a strangled cry and a sound as of a blow. The rifle barrel disappeared, and the sounds of a struggle came from the building.

“Come on!” cried Carnes as he rose to his feet, and made his stumbling way forward, the others following at the best speed which their numbed limbs would allow.

As they reached the door they were aware of a struggle which was going on inside. With an oath the doctor threw his massive frame against the door. It

creaked, but the solid oak of which it was composed was proof against the attack, and he drew back for another onslaught. From the house came a pistol shot, followed by a despairing cry and a guttural shout. Reinforced by Carnes, the doctor threw his weight against the door again. With a rending crash it gave, and they fell sprawling into the cabin. The doctor was the first one on his feet.

“Who are you?” asked a voice from one corner. The doctor whirled like a flash and covered the speaker with his pistol.

“Put them up!” he said tersely.

“I am unarmed,” the voice replied. “Who are you?”

“We’re from the United States Secret Service,” replied Carnes who had gained his feet. “The game is up for you, and you’d better realize it.”

“Secret Service! Thank God!” cried the voice. “Get Koskoff—he has the plans. He has gone out through the tunnel!”

“Where is it?” demanded Carnes.

“The entrance is that iron plate on the floor.”

Carnes and the doctor jumped at the plate and tried to lift it, without result. There was no handle or projection on which they could take hold.

“Not that way,” cried the voice. “That cover is fastened on the inside. Go outside the building; he’ll come out about two hundred yards north. Shoot him as he appears or he’ll get away.”

The three men nearly tumbled over each other to get through the doorway into the bitter cold outside. As they emerged from the cabin the gaze of the guide swept the surrounding hills.

“There he goes!” he cried.

“Get him!” said Carnes sharply.

Walter ran forward a few feet and dropped prone on the ground, cuddling the stock of his rifle to his

cheek. Two hundred yards ahead a figure was scurrying over the rocks away from the cabin. Walter drew in his breath and his hand suddenly grew steady as his keen gray eyes peered through the sights. Carnes and the doctor held their breath in sympathy.

Suddenly the rifle spoke, and the fleeing man threw up his arms and fell forward on his face.

“Got him,” said Walter laconically.

“Go bring the body in, Carnes,” exclaimed the doctor. “I’ll take care of the chap inside.”

“Did you get him?” asked the voice eagerly, as the doctor stepped inside.

“He’s dead all right,” replied the doctor grimly. “Who the devil are you, and what are you doing here?”

“There is a light switch on the left of the door as you come in,” was the reply.

Dr. Bird found the switch and snapped on a light. He

turned toward the corner from whence the voice had come and recoiled in horror. Propped in the corner was the body of a middle-aged man, daubed and splashed with blood which ran from a wound in the side of his head.

“Good Lord!” he ejaculated. “Let me help you.”

“There’s not much use,” replied the man rather faintly. “I am about done in. This face wound doesn’t amount to much, but I am shot through the body and am bleeding internally. If you try to move me, it may easily kill me. Leave me alone until your partners come.”

The doctor drew a flask of brandy from his pocket and advanced toward the corner.

“Take a few drops of this,” he advised.

With an effort the man lifted the flask to his lips and gulped down a little of the fiery spirit. A sound of tramping feet came from the outside and then a thud as though a body had been dropped. Carnes and

Walter entered the cabin.

“He’s dead as a mackerel,” said Carnes in answer to the doctor’s look. “Walter got him through the neck and broke his spinal cord. He never knew what hit him.”

“The plans?” came in a gasping voice from the man in the corner.

“We got them, too,” replied Carnes. “He had both packets inside his coat. They have been opened, but I guess they are all here. Who the devil are you?”

“Since Koskoff is dead, and I am dying, there is no reason why I shouldn’t tell you,” was the answer.

“Leave that brandy handy to keep up my strength. I have only a short time and I can’t repeat.

“As to who I am or what I was, it doesn’t really matter. Koskoff knew me as John Smith, and it will pass as well as any other name. Let my past stay buried. I am, or was, a scientist of some ability; but fortune frowned on me, and I was driven out of the world.

Money would rehabilitate me--money will do anything nowadays--so I set out to get it. In the course of my experimental work, I had discovered that cold was negative heat and reacted to the laws which governed heat."

"I knew that," cried Dr. Bird; "but I never could prove it."

"Who are you?" demanded John Smith.

"Dr. Bird, of the Bureau of Standards."

"Oh, Bird. I've heard of you. You can understand me when I say that as heat, positive heat is a concomitant of ordinary light. I have found that cold, negative heat, is a concomitant of cold light. Is my apparatus in good shape outside?"

"The reflector is smashed."

"I'm sorry. You would have enjoyed studying it. I presume that you saw that it was a catenary curve?"

“I rather thought so.”

“It was, and it was also adjustable. I could vary the focal point from a few feet to several miles. With that apparatus I could throw a beam of negative heat with a focal point which I could adjust at will. Close to the apparatus, I could obtain a temperature almost down to absolute zero, but at the longer ranges it wasn't so cold, due to leakage into the atmosphere. Even at two miles I could produce a local temperature of three hundred degrees below zero.”

“What was the source of your cold?”

“Liquid helium. Those cylinders contain, or rather did contain, for I expect that Koskoff has emptied them, helium in a liquid state.”

“Where is your compressor?”

“I didn't have to use one. I developed a cold light under whose rays helium would liquefy and remain in a state of equilibrium until exposed to light rays. Those cylinders had merely enough pressure to force

the liquid out to where the sun could hit it, and then it turned to a gas, dropping the temperature at the first focal point of the reflector to absolute zero. When I had this much done, Koskoff and I packed the whole apparatus here and were ready for work.

“We were on the path of the transcontinental air mail, and I bided my time until an especially valuable shipment was to be made. My plans, which worked perfectly, were to freeze the plane in midair and then rob the wreck. I heard of the jewel shipment the T.A.C. was to carry and I planned to get it. When the plane came over, Koskoff and I brought it down. The unsuspected presence of another plane upset us a little, and I started to bring it down. But we had been all over this country and knew there was no place that a plane could land. I let it go on in safety.”

“Thank you,” replied Carnes with a grimace.

“We robbed the wreck and we found two packets, one the jewels I was after, and the other a sealed packet, which proved to contain certain War Department plans. That was when I learned who Koskoff was. I

had hired him in San Francisco as a good mechanic who had no principles. He was to get one-fourth of the loot. When we found these plans, he told me who he was. He was really a Russian secret agent and he wanted to deliver the plans to Russia. I may be a thief and a murderer, but I am not yet ready to betray my country, and I told him so. He offered me almost any price for the plans; but I wouldn't listen. We had a serious quarrel, and he overpowered me and bound me.

"We had a radio set here and he called San Francisco and sent some code message. I think he was waiting here for someone to come. Had we followed our original plans, we would have been miles from here before you arrived.

"He had me bound and helpless, as he thought, but I worked my bonds a little loose. I didn't let him know it, for I knew that the plane I had let get away would guide a party here and I thought I might be able to help out. When you came and attacked the house, I worked at my bonds until they were loose enough to throw off. I saw Koskoff start my cold apparatus to

working and then he quit, because he ran out of helium. When he started shooting again, I worked out of my bonds and tackled him.

“He was a better man than I gave him credit for, or else he suspected me, for about the time I grabbed him he whirled and struck me over the head with his gun barrel and tore my face open. The blow stunned me, and when I came to, I was thrown into this corner. I meant to have another try at it, but I guess you rushed him too fast. He turned and ran for the tunnel, but as he did so, he shot me through the body. I guess I didn’t look dead enough to suit him. You gentlemen broke open the door and came in. That’s all.”

“Not by a long shot, it isn’t,” exclaimed Dr. Bird.

“Where is that cold light apparatus of yours?”

“In the tunnel.”

“How do you get into it?”

“If you will open that cupboard on the wall, you’ll find

an open knife switch on the wall. Close it.”

Dr. Bird found the switch and closed it. As he did so the cabin rocked on its foundations and both Carnes and Walter were thrown to the ground. The thud of a detonation deep in the earth came to their ears.

“What was that?” cried the doctor.

“That,” replied Smith with a wan smile, “was the detonation of two hundred pounds of T.N.T. When you dig down into the underground cave where we used the cold light apparatus, you will find it in fragments. It was my only child, and I’ll take it with me.”

As he finished his head slumped forward on his chest. With an exclamation of dismay Dr. Bird sprang forward and tried to lift the prostrate form.

In an agony of desire the Doctor tightened his grip on the dying man’s shoulder. But Smith collapsed into a heap. Dr. Bird bent forward and tore open his shirt and listened at his chest. Presently he straightened up.

“He is gone,” he said sadly, “and I guess the results of his genius have died with him. He doesn’t strike me as a man who left overmuch to chance. Carnes, is your case completed?”

“Very satisfactorily, Doctor. I have both of the lost packets.”

“All right, then, come back to the wreck and help me pack my burros. I can make my way back to Fallon without a guide.”

“Where are you going, Doctor?”

“That, Carnes, old dear, is none of your blankety blanked business. Permit me to remind you that I am on my vacation. I haven’t decided yet just where I am going, but I can tell you one thing. It’s going to be some place where you can’t call me on the telephone.”